In which k is some constant. Substituting from (1) we obtain

$$\frac{1}{k^2} = \frac{da^2 - dy^2}{da^2 \sin \gamma}.$$

By making $\frac{1}{k^2} = 0$, we obtain $da = dy$, which, from the triangle in which these occur, is equivalent to saying, the sum of the angles of a plane triangle is constant and equal to two right-angles. This hypothesis leads to the Euclidean, or parabolic, geometry, making $\frac{1}{k^2} < 0$ makes $dy > da$, which shows that the sum of the angles of a plane triangle is less than two right-angles, and leads to Lobatschewsky, or hyperbolic, geometry. Finally, the hypothesis $\frac{1}{k^2} > 0$ makes $da > dy$ and indicates that the sum of the angles of a plane triangle is greater than two right-angles. This gives rise to the elliptic geometry. The last is divided into two divisions — the single elliptic geometry and the double elliptic geometry. The names parabolic, hyperbolic, single elliptic, and double elliptic were applied to these spaces by Klein. The last two kinds of space are nearly alike. Euclidean geometry may be regarded as the common limit of the hyperbolic and the elliptic geometry. Considerations similar to the preceding lead to four kinds of n-dimensional space, and hence there are four kinds of n-dimentional geometry.

ALTAKAPAS COUNTRY.

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In the southern part of Louisiana there is an interesting region called the "Altakapas Country." It was once inhabited by a tribe of Indians of that name. They have the reputation of having been cannibals, but the later generations were peaceful and industrious. A few of them, they say, still exist and are famous for the skilful manner in which they make a peculiar kind of basket-work. Specimens of this may be seen in the museum of the Tulane University of Louisiana.

Roughly speaking, the region referred to embraces the land bordering the Gulf, west of the Atchafalaya and east of the Mermentan River. There is some discussion as to the extent of the country known by that name. As ordinarily used the term is elastic, but in a map printed in 1826 it includes all of what was then known as La Fayette, St. Mary's, and St. Martin's parishes and what is now known as Vermillion, La Fayette, St. Martin's, and St. Mary's.

Excepting five islands to which I shall refer later, this country is low, level, and rich. It is a part of the alluvium of the delta, which is intersected by many bayous, the arteries of Louisiana. The Atchafalaya is sometimes called "Old River," and was once no doubt the bed of the Mississippi. To-day it is reddened by the water from the Red River, in the mouth of which it begins. It is now perhaps the largest collateral artery of the main trunk. It was once clogged by an enormous raft, which was removed by the State in 1835. According to LeConte, it "was a mass of timber eight miles long, seven hundred feet wide, and eight feet thick. It had been accumulating for more than fifty years, and at the time of its removal was covered with vegetation, and even with trees sixty feet high."

The Altakapas country consists of tilled lands, low meadows, and sea-marshes. The thriftiest of the first extends along that tortuous, sluggish stream called Bayou Teche. It is very rich and well cultivated, and by many is considered the garden-spot of the State. The banks of the Teche are lined by beautiful sugar plantations with old-time palatial residences and many modern refineries. Cane is there worked, and sugar and molasses manufactured according to the latest scientific methods. Enormous quantities of sugar, molasses, rice, cotton fibre, oil, and meal, and cypress lumber are shipped from this region. Even the moss on the trees is the source of an income of no little consequence.

This bayou begins in a network of streams in the Red River country and empties into the Atchafalaya below Grand Lake.

In few places in the world will you meet with such scenery. A trip down the Teche from St. Martinsville, a quaint town grey with age and "finished" long ago, once called "the little Paris, the land of Evangeline," on a sugar-packet is claimed by many, for scenery of its kind, to be unrivalled outside of Louisiana.

West of the Teche are miles of meadow-land, where many herds of horses and cattle pasture. Southward bordering the bays and Gulf is a region of sea-marshes and floating prairies.

In the midst of this marsh, near Vermilion and Atchafalaya Bays, there is a chain of five islands, the highest land in lower Louisiana. The most western is called sometimes Miller's, sometimes Orange, and sometimes Jefferson's Island. It is the centre of Joseph Jefferson's famous plantation. The second is called Petite Anse or Avery's Island, where the Avery salt mine is located, the like of which, they say, does not exist in this country. The third is Week's Island, the fourth Cote Blanche, and the last Belle Isle.

The fact that five islands exist, much different from the surrounding country, of a different formation, in a straight line, about six miles apart, in the Mississippi Delta is curious. But stranger still the core of Avery's Island is a mass of rock salt of the purest kind, the only impurity, in fact, is .120 per cent of gypsum.

While prospecting for the opening of another mine, they found the bones of the mastodon, giant sloth and perhaps of other extinct animals in layers of material of a peaty nature. Here, also, were found beautiful potsherds and kitchen middens of the Indians who once lived there. There were also indications, I was told, that the Indians knew of the presence of this salt, although, according to Dr. Hilgard, it was not discovered by the whites until 1862. The bones and potsherds which were found there are now in the museum of the Tulane University of Louisiana.

To scientists and sightseers these mines are well worthy a visit, but unfortunately are rather inaccessible. It is easiest reached from New Iberia on the Southern Pacific Railroad. There is a freight train running to the mines, which carries a passenger car. This remains, however, only long enough to collect the freight, which is seldom more than thirty minutes. There is only one train daily. The wagon-road is dangerous at times and never pleasant for vehicles owing to much mud, bad bridges and a pole-road over the marshes. The best way to reach it is on horseback, and for this purpose the Acadian ponies have no equal. They have a peculiar gait, faster than a fast walk, and lift their feet in a quick peculiar manner, which comes, they say, from pulling their feet quickly out of miry places.

The island is visible a long way off, and owing to the contrast with the surrounding country is very striking and prominent. The soil is pure sand and clay, in places mixed to form a loam.

To enter the mine you are apparently instantly dropped down a shaft one hundred and seventy feet deep. You are then in a huge cake of salt resembling ice. The weight above is supported by huge pillars of salt. Enormous quantities have been removed and the supply seems exhaustless. In places it is as clear and transparent as ice, in others granular, in others dark in color, and in others in irregular waves as though contorted by pressure. Here and there are pockets in which beautiful cubical crystals may be found, some of which the writer collected were $1\frac{1}{2} \times 1\frac{1}{2} \times 1$ inches in size.

Although it affords ventilation, they have been troubled by a slight cave, which of course gradually washes larger in size, and a fine sand is thus washed into the mines.

In the Smithsonian Contributions, Vol. XXIII., Dr. Eugene Hilgard has described this formation in a paper entitled "Geology in Lower Louisiana and the Salt Deposit of Petite Anse Island."

One of the other islands borders on the bay, where there is a bluff from which the formation may be studied.

Over in the neighboring parish of Calcasieu, near Lake Charles, there is a bed of sulphur which promises to become an important industry.